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(54) Title: HIGHLY CRYSTALLINE CROSS-LINKED OXIDATION-RESISTANT POLYETHYLENE

(57) Abstract: The present invention relates to methods for making highly crystalline cross-linked polymeric material, for example, highly crystalline cross-linked ultra-high molecular weight polyethylene (UHMWPE). The invention also provides methods of making antioxidant-doped highly crystalline cross-linked polymeric material using high pressure and high temperature crystallization processes, medical implants made thereof, and materials used therein.

WO 2005/074619 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/03305

A. CLASSIFICATION OF SUBJECT MATTER

IPC: A61F 2/38(2006.01), 2/00(2006.01), 2/02(2006.01), 2/28(2006.01), 2/40(2006.01); C08F 2/46(2006.01); C08K 5/01(2006.01)

USPC: 424/422, 423, 424, 425, 426; 523/113; 524/483, 585; 623/19, 20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 424/422, 423, 424, 425, 426; 523/113; 524/483, 585;

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
USPAT; USPGPUB; DERWENT; JPO; EPO

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,620,198 B2 (BURSTEIN et al) 16 September 2003 (16.09.2003), see entire document.	1-57
Y	US 5,827,904 A (HAHN) 27 October 1998 (27.10.1998), see entire document.	1-57
Y	US 6,517,857 B2 (YLANEN et al) 11 February 2003 (11.02.2003), see entire document.	1-57
Y	MARAATOGLU et al. Unified wear model for highly crosslinked ultra-high molecular weight polyethylene (UHMWPE). Biomaterials 20 (1999) 1463-1470., see entire document.	1-57
Y	PARTH et al. Studies on the effect of electron beam radiation on the molecular structure of ultra-high molecular weight polyethylene under the influence of α-tocopherol with respect to its application in medical implants. Journal of Material Science: Materials in Medicine 13 (2002) 917-921.	1-57



Further documents are listed in the continuation of Box C.



See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
20 March 2006 (20.03.2006)

Date of mailing of the international search report

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PATENT COOPERATION TREATY

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PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

ISACSON, John, P.
Heller Ehrman LLP
1717 Rhode Island Avenue, N.W.
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United States of America

Date of mailing (day/month/year) 08 February 2006 (08.02.2006)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 37697-0104	
International application No. PCT/US2005/003305	International filing date (day/month/year) 03 February 2005 (03.02.2005)

1. The following indications appeared on record concerning:

☐ the applicant ☐ the inventor ☒ the agent ☐ the common representative

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2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☐ the name ☒ the address ☐ the nationality ☐ the residence

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EPO-DG 1

15 02 2006

3. Further observations, if necessary:

TEAM 14

4. A copy of this notification has been sent to:

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The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Bernard THORAX (Fax 338-87-20)
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